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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,100

05/19/2006

Kouji Waki

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EXAMINER

NGUYEN, HIEN NGOC

ART UNIT

PAPER NUMBER

3768

MAIL DATE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/580,100	<b>Applicant(s)</b> WAKI ET AL.	
	<b>Examiner</b> HIEN NGUYEN	<b>Art Unit</b> 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 May 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This action is responsive to the Arguments/Amendments filed 05/03/2010. Amendments to claims 1-5, 7-10 and 13 have been entered. Claim 6 has been canceled. Claims 1-5 and 7-13 are now pending.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 9-11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner does not understand this claim feature: wherein the color elastic image is displayed alternatively a larger region or a smaller region than the setting strain or elastic modulus with a set hue. What region does applicant tries to claim? Examiner interprets the claim as elastic image with multiple regions and each region has different color hue.

Claims 1 and 9-11 are indefinite because it includes the phrase “means” and not “means for”. It’s unclear whether applicant would like to invoke 112, 6<sup>th</sup> paragraph or not. If so, the claims as recited would be in improper form.

If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that the phrase “means for” or

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“step for” is clearly **not** modified by sufficient structure, material, or acts for performing the claimed function.

If applicant does **not** wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that it will clearly not be a means (or step) plus function limitation (e.g., deleting the phrase “means for” or “step for”).

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by Lin (US 6,068,597).

3. Addressing claims 1 and 9 Lin discloses an ultrasonic imaging apparatus comprising: an ultrasonic probe that receives and sends ultrasonic waves from/to an object (see Fig. 1, element 114, the ultrasound transducer); ultrasound image structuring that generates an ultrasound image on the basis of a reflected echo signal received by the ultrasonic probe (see Fig. 1, elements 136, 134, 132, 130, these

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processors and scan converter receive echo signal and generate images); elastic image structuring that obtains a strain or an elastic modulus of the elasticity of the object of a region corresponding to the ultrasound image on the basis of the reflected echo signal and generates a color elastic image (see col. 2, lines 40-49, col. 3, lines 13-43, Fig. 1, elements 136, 134, 132, 130, these processors and scan converter receive echo signal and generate elastic color images); a display that overlays the ultrasound image to the color elastic image, or arranges the ultrasound image and the color elastic image and displays the resultant image on a screen (see col. 2, line 9-col. 3, line 43, the color elastic is overlay the black and white image in order to differentiating tumors in soft organs such as the breast, prostate and liver); setting means for variably setting a corresponding relationship between a hue of the color elastic image displayed on the screen and the level of the strain or elastic modulus (see col. 7, lines 47-col. 8, lines 11, claim 4, adjust color window to create accurate color image that enable viewer to differentiate tumor from soft tissue); a calculating means that calculates the strain or elastic modulus of the elasticity of the object of a region corresponding to the ultrasound image on the basis of the reflected echo signal (see col. 2, line 10-col. 3, line 43, the Doppler spectrometer provide information on elasticity which is the same as calculating the strain or elastic modulus); a color conversion table that is rewritable and set a relationship between the level of the strain or elastic modulus and the color of the color elastic image (see col. 8, lines 1-11, col. 9, lines 8-49, color mapping, look-up table are part of the color conversion table). A color image generating means that read the color corresponding to the obtained strain or elastic modulus from the conversion table and

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generates a color elastic image indicating the distribution of the strain or elastic modulus (see Fig. 8, elements 136, 138, col. 8, lines 1-11 and col. 9, lines 8-49, elements 136 and 138 have look-up table, color mapper, pixel encoder/interpolator and color frame buffer to create color elastic image).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5, 7-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (US 6,068,597) and in view of Miga (US 2004/0234113).

6. Addressing claims 2-5, 7-8 and 10, Lin does not disclose an ultrasonic imaging apparatus that display on the screen with a color bar for a corresponding relationship between the hue of the color elastic image and the level of the strain or the elastic modulus. Miga discloses: an ultrasonic imaging apparatus that display on the screen with a color bar for a corresponding relationship between the hue of the color elastic image and the level of the strain and elastic modulus (see Fig. 2C, 3, 9D and 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Lin's apparatus to display on the screen with a color bar taught by Miga because

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the color bar provide a visual corresponding relationship between the hue of the color elastic image and the level of a physical quantity.

7. Addressing claims 11-13, Lin discloses an ultrasonic imaging apparatus comprising: the strain or an elastic modulus calculated from the amount of motion of the tissue (see col. 2, line 10-col. 3, line 43, Fig. 4, col. 4, lines 52-67, vibrational color Doppler technique determine the strain or elastic modulus of the tissue from the amount of motion of the tissue cause by the vibration). Miga discloses a color bar indicating a correspondence between the hue of the color elastic image and the strain or the elastic modulus (see Figs. 2C, 3 and 9D); a character indicating the assignment of the hardness of the color elastic image is displayed around the color bar (see Fig. 2C, the number next to color bar); wherein the color elastic image is displayed alternatively a larger region or a smaller region than the setting strain or elastic modulus with a set hue (Figs. 2C, 3, 9D and 11, in the figures there are larger and smaller region with different color hue).

### ***Response to Arguments***

Applicant's arguments see pages 1-5, filed 05/03/2010, with respect to the rejection(s) of claim(s) 1-5 and 7-13 under Matsumura and Suzuki have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Lin and Miga.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 7,245,746 (abstract, Figs. 2-3, col. 4, lines 9-13).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HIEN NGUYEN whose telephone number is (571)270-7031. The examiner can normally be reached on 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571)272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. N./  
Examiner, Art Unit 3768

/Long V Le/  
Supervisory Patent Examiner, Art Unit 3768